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The First Decade Of Law in Space

The world community has had just over a decade of experience in space exploration launched from Earth. This venture has not only evoked awe in crossing a new physical threshold, with the attendant excitement of scientific discoveries; it has posed in yet another form the challenge of how to use modern technology for man's benefit and not to accomplish his destruction.

Scientists today conclude that the number of species of living organism that have become extinct in the Earth's natural history is many times the number of species still in existence on the face of the globe. Nothing guarantees that the species *homo sapiens* will be immune from extinction through the ordinary processes of natural selection. In the case of man there is the added and much more dramatic threat from man-made engines of destruction developed by modern science. Winston Churchill, with characteristic realism, put the situation this way:

> Mankind has never been in this position before. Without having improved appreciably in virtue or enjoying wiser guidance, it has got into its hands for the first time the tools by which it can unfailingly accomplish its own extermination. That is the point in human destinies to which all the glories and toils of men have at last led them. They would do well to pause and ponder upon their new responsibilities.[1]

However, the great forces that science has placed at our disposal are themselves neutral. It is the use to which man puts them that determines whether modern science results in the betterment of mankind—or its extinction. President John F. Kennedy, believing in the

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[1] W. S. CHURCHILL, THE GATHERING STORM, p. 40, Houghton Mifflin Company, Boston, 1948.

progress and perfectibility of man, recognized that mankind can, through effort, harness the forces of science for good. But it must make the effort. In his inaugural address President Kennedy appealed to the other leaders of the world to minimize the dangers of scientific power and to maximize its benefits. He said:

> . . . man holds in his mortal hands the power to abolish all forms of human poverty and all forms of human life . . . .
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> Let both sides, for the first time, formulate serious and precise proposals for the inspection and control of arms—and bring the absolute power to destroy under the absolute control of all nations.
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> Let both sides seek to invoke the wonders of science instead of its terrors. Together let us explore the stars, conquer the deserts, eradicate disease, tap the ocean depths, and encourage the arts and commerce.[2]

Impact of Space Technology on International Affairs

In political terms, space exploration has at least the following implications:

> —The enormous tasks involved in substantial exploration invite governments and peoples to adopt an approach of cooperation for common ends, instead of an approach based on conflict and contest.
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> —The requirements of effective cooperation offer opportunities for creating and operating genuinely international institutions—as distinct from the holding of diplomatic meetings and conferences; the success of such institutions may become increasingly important to an ever more interdependent world.
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> —Before military interests become vested in space, the opportunity exists to assure that the nuclear arms race is not extended into the new environment.
>
> —Effective cooperation in space exploration and use can produce a feedback into the handling of terrestrial problems among nations so as to reduce conflict and promote collaboration in the interests of peace and human well-being.

World Community's Response to Sputnik I

In looking back over the first years of space exploration we can gain some idea of the extent to which the world community's handling of this new venture evidences rationality and offers promise. In the time of Columbus the two great maritime powers—Spain and Portugal—sought by Papal bulls and a treaty to partition the New World of that time. Today, however, we see no attempt by the space powers to

[2] 44 Department of State Bulletin 175-176, February 6, 1961.

divide among themselves the new realm of their explorations. Nor has there been any effort to extend the boundaries of terrestrial jurisdiction from the Earth's surface through its envelope of air indefinitely into the reaches of space. And, although efforts to control the arms race on Earth have proceeded only slowly and with difficulty, the nations of the world have been able to agree that they will not station weapons of mass destruction in space.

The problem of designing a public order to govern in space has been treated by the international community as a world concern: how to organize for the exploration of space from the Earth, to be undertaken as an effort on behalf of all mankind. Article I of the 1967 Space Treaty states this basic principle in the following words:

> The exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.

It was characteristic of this view of space exploration as a world problem that the United Nations General Assembly should embark on a discussion of rules for the use of space in the very next year after Sputnik I. The Assembly's action in 1958 was to establish an *Ad Hoc* Committee, one of whose tasks was to study legal problems arising in the exploration of space. In addition to cataloguing problems that merited study and indicating some views on relative priorities among them, the 1959 *Ad Hoc* Committee expressed in very tentative language a developing rule of law on the freedom of space. Its statement read:

> During the International Geophysical Year 1957-1958 and subsequently, countries throughout the world proceeded on the premise of the permissibility of the launching and flight of the space vehicles which were launched, regardless of what territory they passed over during the course of their flight through outer space. The Committee, bearing in mind that its terms of reference refer exclusively to the peaceful uses of outer space, believes that with this practice there may have been initiated the recognition or establishment of a generally accepted rule to the effect that, in principle, outer space is, on conditions of equality, freely available for exploration and use by all in accordance with existing or future international law or agreements. [3]

A year and a half later the USSR accomplished an unmanned landing on the moon. Both the Soviet and United States Governments

[3] UN. Doc. A/4141, July 14, 1959.

made statements ruling out any claims of national sovereignty to the lunar surface.[4]

Early Steps in Law-Making for Space

In two more years, the United Nations General Assembly, representing all members of the world Organization, was ready to announce for the first time some conclusions about law in space.

The rule that space is freely available to all and that neither space nor celestial bodies are subject to national appropriation was commended to governments for their guidance in a General Assembly resolution adopted in December 1961.[5] The resolution stated also the principle that "International law, including the Charter of the United Nations, applies to outer space and celestial bodies." So far, the General Assembly's actions had the character of recommendation only, in which the Assembly commended to governments a developing legal rule or principle.

In 1963 the Assembly adopted a more formal document, entitled Declaration of Legal Principles Governing Activities of States in the Exploration and Use of Outer Space.[6] This Declaration, embodying the ideas from the 1961 resolution along with a number of other propositions, was adopted without a single dissenting vote. Because of its special character and the circumstances of unanimous adoption, the United States recognized this as a law-making resolution. Ambassador Adlai Stevenson addressed the Assembly as follows on the Declaration:

> We believe these legal principles reflect international law as it is accepted by the Members of the United Nations. The United States, for its part, intends to respect these principles. We hope that the conduct which the resolution commends to nations in the exploration of outer space will become the practice of all nations. [7]

The Space Treaty of 1967

The contents of the General Assembly's Declaration, together with provisions drawn from the Antarctic Treaty and from the Assembly's

[4] Address by Premier Khrushchev before the National Press Association, September 16, 1959, in *Washington Post*, September 17, 1959, p. A17; statement of Ambassador Stevenson before the First Committee of the United Nations General Assembly, December 4, 1961, UN. Doc. A/C.1/PV.1210.

[5] U.N.G.A. Res. 1721(XVI), December 20, 1961.

[6] U.N.G.A. Res. 1962(XVIII), December 13, 1963.

[7] Statement before the First Committee of the United Nations General Assembly, December 2, 1963, UN. Doc. A/C.1/PV.1342.

own resolution of October 18, 1963, against stationing weapons of mass destruction in space, were later embodied in a general treaty on space law.[8] The Space Treaty entered into force on October 10, 1967.

This Treaty states the rule of freedom of space and the applicability of international law in space.[9] In addition to the prohibition on stationing mass-destruction weapons in space, it prohibits military bases, testing of weapons, or military maneuvers on celestial bodies.[10] The Treaty sets forth obligations for assistance to astronauts in distress and for their prompt and safe return by a country that rescues them.[11] The Treaty establishes a rule of international liability for damage caused by space vehicles.[12] It contains provisions on jurisdiction and ownership of vehicles.[13] It states obligations on the avoidance of harmful interference and contamination in carrying out space activities.[14] The Treaty includes also provisions on exchange of information and access to installations on celestial bodies.[15]

From this summary review it is evident that the world community has already made a good deal of law to govern man's activities in space. The area of space law is one in which technology has not outstripped man's ability to create rules to deal with the vistas opened up by his technical ingenuity. Development of law has more than kept pace with scientific and technological progress.

The new law that has been made in the last few years seeks to provide rules for some situations that have not yet become actuality. The rules set forth in the new Space Treaty governing access to facilities that may be established on celestial bodies provide one example of man's attempt to control his technology by anticipating its next stage of development. Indeed, it has been necessary to guard against the temptation to make too much law on the basis of too little experience. It is clear enough that the legal provisions already developed will have to undergo continuing review as space exploration proceeds, in order to gauge how realistic they are and how much modification may be necessary.

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[8] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, 18 UST 2410.

[9] *Id.*, Articles I-III.

[10] *Id.*, Article IV.

[11] *Id.*, Article V.

[12] *Id.*, Article VII.

[13] *Id.*, Article VIII.

[14] *Id.*, Article IX.

[15] *Id.*, Articles XI and XII.

Further International Agreements

Since the Space Treaty of 1967 there has been signed an Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space.[16] This Agreement elaborates Articles V and VIII in the general Space Treaty. Still under negotiation is a convention on liability for damage, in elaboration of Article VII of the general Treaty. One of the stumbling blocks remaining there is the question of resort to impartial third-party settlement in the event of disputes over liability or damage. In this as in other contexts, resistance to arbitration or impartial adjudication remains a vestige of continuing nationalism and reluctance of nation States to accept the greater international cooperation that must be their responsibility in today's highly interdependent community of nations.

The progress made so far in building space law offers fair hopes for the establishment of a public order in space—an order that should prove sufficiently flexible and responsive to technological developments and needs. The fact that the new environment was virgin territory has been an advantage in the law-making process, since there were no vested interests in space to oppose the development of reasoned rules.

The Place of Man in Space

As one looks far into the future and deep into the reaches of space, it may seem presumptuous for the human beings of this planet to be making law that is to govern throughout the navigable universe. Professor Harlow Shapley has said "we should contemplate at least 10^{14} planetary situations for life at our level of sentiency."[17] And he has estimated that there are in fact "at least 10^{8} high-life planets" or, in another phrase, "more than a hundred million domiciles of highly developed organisms" in the universe.[18]

For the present, however, it is necessary to make space law from the Earth in order to govern man's activities in space. Should there some day be encountered sentient and intelligent beings from other parts of the universe, the people of Earth may confront a challenging task of understanding, communication, and accommodation. This, if nothing else, should unite the nations of the globe.

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[16] 90th Cong., 2d Sess., Executive J.

[17] H. SHAPLEY, OF STARS AND MEN, p. 84, Beacon Press, Boston, 1958.

[18] *Id.*, p. 79.

Implications of Space Exploration for Affairs on Earth

Looking now Earthward, what implications may we discern for future events on this planet from the efforts to create a legal regime applying in space? It is possible that habits of international cooperation developed in dealing with space will prove contagious and will carry over into other areas of the relationships among terrestrial nations.

International cooperation in space technology.

It is the policy of the United States to maximize international cooperation in space activities. Under the numerous agreements we have with other countries and international organizations there are included projects for weather forecasting, aids to navigation, and communication by satellite. These are areas in which truly international ventures can demonstrate their efficiency, soundness and merit.

To take one example, the World Weather Watch program which was approved last year by the World Meteorological Organization promises to develop into a comprehensive cooperative system for greatly improved global weather forecasting.[19] Specifically, this program aims to achieve before 1971 (1) a substantial improvement in the global observation system using satellites, merchant ships, buoys and other floating stations; (2) increase of world, regional and national data centers; (3) organization of a global weather telecommunications system; (4) accelerated training of meteorologists; and (5) planning of a global atmospheric research system, with special studies of air-sea interaction.

International communication by satellite.

During the coming months the members of the 1964 international consortium for satellite communications will be considering definitive arrangements to take the place of the interim arrangements agreed four years ago.[20] More than 60 countries are today members of INTELSAT. They and other members of the world community have before them the opportunity of confirming and enlarging the international approach to communication by satellite.

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[19] "World Weather Watch–Plan and Implementation Program," WMO publication, May 1967, WMO 5th Congress, Resolution 16 (Cg-V)–World Weather Watch.

[20] Agreement Establishing Interim Arrangements for a Global Commercial Communications Satellite System, 15 UST 1705.

The wisdom and indeed necessity of international cooperative action in satellite communications is underscored by some very practical problems. For example, there is an absolute limit on the width of the radio spectrum, and frequencies must be allocated for space and terrestrial services. There is also the potential problem of crowding of satellites at the altitude where synchronous orbit is maintained. The international community will need to consider the prospect of direct broadcasting from satellites to home receivers—a development that could become a technical reality in a very few years.

Then there are questions of economic organization and social utility in the international arrangements for communications satellites. Will those arrangements be used to assure effective communications among all countries and areas of the world—not only among the industrialized and developed countries? Will traffic among the latter serve the additional function of sustaining communication by satellite with and among the developing countries during the nearer future when their own needs and use alone might not sustain an international satellite communication system? Will the possibilities of an international system be used to gain experience and confidence in a genuinely international enterprise so as to promote this form of international cooperation and knit more closely together the world community in integrated ventures of common interest?

Relationship of new technologies to economic development.

Thus far, the benefits flowing from space exploration have been of greater scientific than economic significance. It is possible that this will change as technology develops. Some countries, especially the developing countries, have expressed concern about sharing in the economic benefits to be derived from space exploration and use. They have stated their fear that the new technology—largely in the hands of a few highly industrialized countries—will serve simply to widen the gap between the rich nations and the poor. This is a proper concern, and the world community stands challenged to provide answers that are fair, forward-looking, and calculated to contribute to the building of a sound and stable world order.

It is encouraging to note that procedures similar to those that led to adoption of the Space Treaty are now being followed by the world's nations in an attempt to create an international regime in another new environment—the deep ocean floor beyond the limits of national jurisdiction. The United Nations General Assembly has begun in the last

year the consideration of steps to develop such a legal regime.[21] One of the practical questions that will require an answer in the foreseeable future is how to shape this regime so as to encourage optimum development of the resources and so as to devote a just share of the fruits to world community purposes.

Space and Arms Control

It has been noted that agreement on certain arms control measures for space and celestial bodies was reached with relative ease respecting an environment not yet militarized. Can we hope that this will give impetus to arms control measures on Earth? The results so far are not entirely encouraging, but it is reasonable nevertheless to retain hope.

After the signing of the Space Treaty in January 1967, the Soviet Union undertook deployment of a new weapons system—an array of anti-ballistic missiles. The United States had earlier proposed to the USSR discussions on limiting ballistic missiles generally. An agreement in principle from Moscow to conduct talks went unfulfilled, and last fall the United States felt constrained to embark on a limited program of ABM deployment. More recently there have been further exchanges on the holding of discussions about limitation and reduction of offensive and defensive missiles. It is of great importance that these talks take place and that they succeed. The nuclear powers must also proceed with other measures to end the arms race and begin to make nuclear disarmament a reality.

How well do the military activities of the principal space powers comport with their new treaty obligations? Both ICBM's and ABM's transit outer space, though neither type is placed in orbit around the Earth. Article IV of the Space Treaty prohibits the placing in such orbit of nuclear or other mass-destruction weapons, installing them on celestial bodies, or stationing them in space in any other manner. Thus, even in the unlikely event of an ICBM or ABM being flight-tested with a nuclear warhead, such action would not violate the Treaty.

At about the time the Treaty entered into force last year, the USSR tested still another new weapons system—the fractional orbit bombardment system, in which the missile warhead is injected into orbit and then returned to Earth on command just before it achieves one complete trip around the Earth. Here, too, no treaty violation can

[21] Report of the *Ad Hoc* Committee to Study the Peaceful Uses of the Sea-Bed and the Ocean Floor Beyond the Limits of National Jurisdiction, UN. Doc. A/7230, 1968.

be involved if no weapon of mass destruction is carried. And it can be maintained that there is still no violation of Article IV in the unlikely event that such a weapon were carried. But it must be judged disappointing that a major power has responded to the Space Treaty by driving, like Jehu, about as close as it could to the cliff-edge of violation.

During 1968 progress has been made in a most important area of disarmament–prevention of the spread of nuclear weapons. Negotiation of the Non-Proliferation Treaty was completed, and the Treaty has been signed by more than 80 countries.[22] But still others must sign and ratify the Treaty if its purposes are to be achieved. Moreover, the non-nuclear States of the world have made clear their demand that the nuclear powers proceed to adopt meaningful limitations on their vast and still increasing arsenals of nuclear weapons.

Longer-Term Political Effects

The exploration of space has a potential for constructive effect on the nations of Earth that has not yet been felt. It is apparent that so far there has been only a crossing of the threshold into space. Manned exploration of the moon has been beset by difficulties and still lies some distance in the future. Farther voyages are in the stage of contemplation only. The resources and effort required to reach other planets and eventually other star systems stagger the imagination. The United States and the Soviet Union have been pursuing their moon projects independently and separately. There has been no joining of efforts, no division of tasks or real sharing of fruits.

In September 1963 President Kennedy proposed to the Soviet leaders a joint venture for exploration of the moon.[23] This and other overtures brought no tangible response from Moscow. There was a note of encouragement last year when a Soviet scientist affirmed the "decisive significance" of international cooperation "in order to put the great interplanetary expeditionary and other major projects into practice" since "vast material and creative resources will be called for."[24] But so far these words have remained untranslated into any action.

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[22] Treaty on the Non-Proliferation of Nuclear Weapons, 90th Cong., 2d Sess., Executive H.

[23] Speech before United Nations General Assembly, September 20, 1963, 49 Department of State Bulletin 530, 532-33, October 7, 1963.

[24] Address by Dr. Leonid L. Sedov before the 18th Congress of the International Astronautical Federation, Belgrade, in *The New York Times*, September 26, 1967, p. 8.

International relations remain today in the phase where terrestrial conflicts between nations carry over and affect adversely the possibilities of international cooperation in space. Extraneous political considerations intrude into matters of scientific concern to the whole world. Conversely, the requirements of space exploration do not yet exerting a limiting or suppressing effect on international conflict. Nevertheless, it seems possible that further involvement in and commitment to the tasks of space exploration could tend to make the quarrels and rivalries among nations recede in importance and relevance. Thus the focus of attention and effort could shift away from national contests and competitions toward progress on concerns that are common to man.

Sustained effort to make a better life for man on Earth ought to become a primary focus for the next century. So also should the work of exploring farther into the universe. It may be that efforts like these could turn out to give the "moral equivalent of war" for which William James was searching.